REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the following discussion, is respectfully requested.

Claims 33-35, 38, 39, 41 and 45-53 are presently active in the present application.

In the Office Action, Claims 33-35, 38, 39, 41 and 45-53 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Sano et al (U.S. Patent No. 6,407,405), in view of Boydston et al (U.S. 6,375,79), Anders (U.S. Pat. Appl. Publ. No. 2002/0000779), and Roth et al (DE 4007523).

Claim Summary: Claim 33 as previously presented defined:

> 33. A substrate processing apparatus comprising:
> a processing vessel forming a processing space;
> a rotatable supporting table for supporting a substrate to be processed in the processing space, the substrate having a surface to be processed;
> a first radical generation unit, provided at a first sidewall portion of the processing vessel, for ***forming first radicals by a high frequency plasma*** and supplying the first radicals into the processing space;
> a second radical generation unit, provided at the first sidewall portion of the processing vessel, for forming second radicals by a high frequency plasma and supplying the second radicals into the processing space;
> a gas exhaust port, provided at a second sidewall portion of the processing vessel, to exhaust the processing space, the second sidewall portion being disposed opposite to the first sidewall portion with the supporting table placed therebetween,
> wherein the first and the second radical generation unit and the gas exhaust port are provided at the processing vessel, such that the first and the second radicals are respectively introduced from the first sidewall portion toward the second sidewall portion along a first and a second flow path which are substantially parallel to the surface of the substrate mounted on the supporting table, and
> ***a flow adjusting plate interfering with the first flow path to change a flow direction thereof, the first radicals flowing into the processing space along the first flow path whose flow direction has been changed.*** [Emphasis added.]

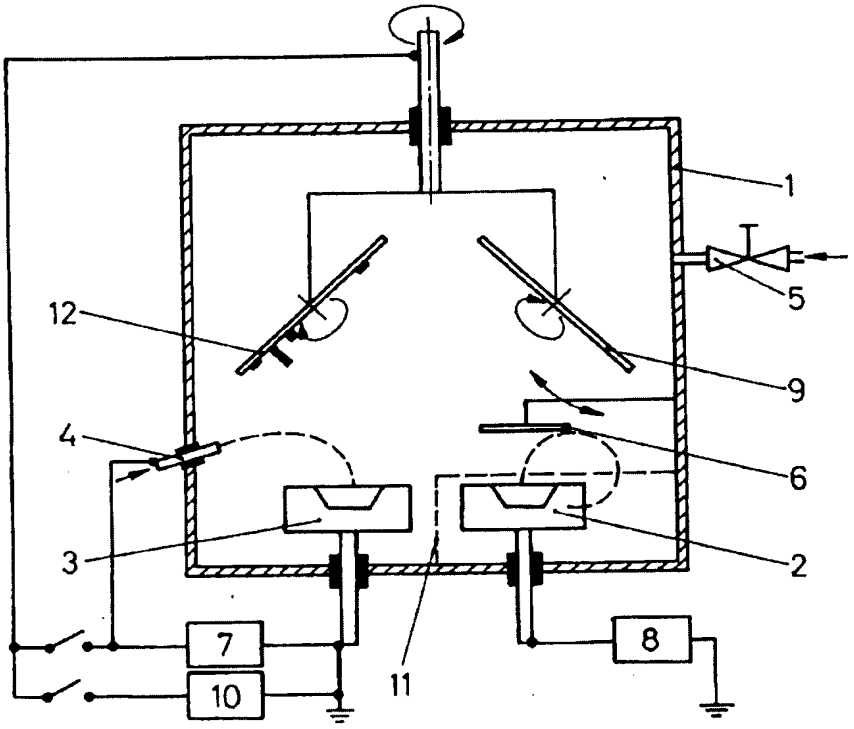
Accordingly, when considered as a whole, there is provided in Claim 33 a flow adjusting plate interfering with the first flow path to change a flow direction thereof, the first

radicals (formed by a high frequency plasma) flowing into the processing space along the first flow path whose flow direction has been changed i.e., by the flow adjusting plate. A similar flow adjusting plate is defined in independent Claim 41.

Art deficiencies: The outstanding Office Action now applies Roth et al in an attempt to address the deficiencies in Sano et al, Boydston et al, and Anders with regard to the claimed flow adjusting plate. The Office Action asserts that Roth et al teach "a pivotable diaphragm (#6, col. 2, lines 29-33; English translation, page 2, paragraph 6, lines 4-5) to divert one of the plasma source (#2)."

Applicants traverse this position for the following reasons.

Figure 1 of Roth et al is reproduced below for the sake of convenience.



In Roth et al, an electron beam evaporator 2 includes in a crucible Al or Br. An electron beam heats the Al or Br in the crucible, thereby melting the Al or Br by the heat of the electron beam to produce a vapor of Al or Br. The vapor is ***electronically neutral***. The evaporator 2 does **not** produce an ion or radical. Further, the electron beam evaporator 2 is encircled by a shield 11 at ground potential, thereby separating the electron beam evaporator 2 from the plasma region. Accordingly, the neutral vapor does not become ionized and does not constitute a radical. Furthermore, the neutral vapor does not constitute a radical formed by a high frequency plasma, as required by Claim 33. Hence, the electron beam evaporator 2 of Roth et al is **not** a plasma source, as the examiner asserted by his assessment: "plasma source (#2)." Thus, the pivotable diaphragm #6 in Roth et al does not constitute a flow adjusting plate interfering with the first flow path to change a flow direction thereof, the first radicals (formed by a high frequency plasma) flowing into the processing space along the first flow path whose flow direction has been changed, as defined by Claim 33.

More specifically, in Figure 1 of Roth et al, the dashed wavy lines in the vicinity of evaporator 2, anode 3, and cathode 4 indicate tracks of each electron beam. In particular, the wavy line in the vicinity of the evaporator 2 indicates the electron beam track for melting Al or Br, and the wavy line in the vicinity of the anode 3 and cathode 4 indicates a track of an electron from the anode 3 to cathode 4 for generating an arc discharge. The examiner will appreciate that the wavy line in the vicinity of the evaporator 2 does **not** indicate a track of a neutral beam diverted by a pivotable diaphragm 6, but rather (as noted above) is a track of the electron beam heating the crucible in evaporator 2.

Hence, the pivotable diaphragm 6 in Roth et al functions to prevent premature boron evaporation onto substrate 12. See page 2, lines 23-31, of the English translation. That is, the pivotable diaphragm 6 performs the function of a shutter blocking the neutral species evaporating from the crucible in evaporator 2. The pivotable diaphragm 6 does **not** adjust a

flow of radicals formed by a high frequency plasma. Accordingly, Roth et al do not disclose or suggest a flow adjusting plate interfering with the first flow path to change a flow direction thereof, the first radicals flowing into the processing space along the first flow path whose flow direction has been changed, as claimed.

M.P.E.P. § 2143.03 requires that all words in a claim must be considered in judging the patentability of the claim against the prior art.

Accordingly, with no showing in Roth et al of the flow adjusting plate defined in independent Claims 33 or 41 and with the remaining art likewise being deficient with regard to this feature, Claims 33 and 41 (and the claims dependent therefrom) are believed to patentably define over the art of record.

Conclusion: In light of the above discussions, the outstanding grounds for rejection are believed to have been overcome. The application is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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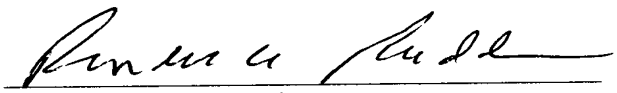

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